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### Non-Gonococcal Urethritis. The Sixth Venereal Disease?

Improvements in the treatment and prevention of gonorrhea have led to the emergence of non-gonococcal urethritis as the leading cause of incidence and lost sick days among all diseases of presumably venereal origin. Information received from continental United States and the Mediterranean and the Far East indicates that this disease is increasingly prevalent. It can cause a great deal of trouble to both the patient and his medical officer.

While many reports are sketchy and incomplete in a number of details, certain characteristics of this disease appear with increasing clarity:

1. The incubation period appears to be long, usually 14-26 days, but it may be shorter or longer. When short incubation periods are observed a dual infection with gonorrhea and non-gonorrheal urethritis may be present, and the gonorrhea may respond to penicillin in the usual manner leaving the non-gonorrheal infection unaffected. The first symptom is usually burning on urination, followed by a urethral discharge which may appear mucoid, mucopurulent or frankly purulent.

2. Many reports indicate that the infection does not respond to sulfa drugs, penicillin or any other antibiotic. However, in a series of over 1,000 cases at Camp Lejeune, 90 % were found to respond well in 3 to 5 days if four grams of sulfadiazine were given initially, followed by one gram every 4 hours. Smaller doses were ineffective. For those on limited water intake or with excessive fluid loss, chloromycetin is the next drug of choice, 500 mg. every 6 hours. These drugs are ineffective unless a "hygienic routine" is also observed for 2-3 weeks directed toward the avoidance of: (1) "milking down" the urethra to look for a discharge; (2) excessive fatigue; (3) sexual intercourse and (4) alcoholic beverages. In a few resistant cases, sitz baths and prostatic massage are indicated. The infection may go on for many months or even years if hygienic routine is not coupled with drug therapy. Local irrigations are to be avoided, as they tend to prolong the inflammation.

3. Penicillin prophylaxis seems to have no value in preventing this disease. It is highly unlikely that penicillin prophylaxis increases the probability of acquiring this disease excepting as it induces men to abandon the use of the condom for prophylactic purposes.

4. From numerous sources in both the Mediterranean and Far East and from one source in this country reports of cultures have indicated the presence, sometimes in pure culture, of large gram positive cocci. Others show a large assortment of secondary invaders. Smears may be entirely negative or show large gram positive cocci.

A cultural study was made on 22 men in Korea by Fleet Epidemic Disease Control Unit No. 1 in August 1951. All 22 men had a purulent urethral discharge of over 6 months duration at the time of culture. The initial smear was stained by Gram's method and found in all cases to be negative for gram negative intracellular diplococci. Large epithelial cells were observed in most of the smears.



Cultures were done on Chocolate media and grown under CO<sub>2</sub> tension. Twenty-one were negative, and one positive to oxidase reagent. Cultures on Eosin Methylene Blue (EMB) revealed small grayish-white colonies with a black center in all 21 cases. Smears from these colonies, by gram method, showed large gram-positive encapsulated cocci. Similar findings were noted in several hundred cultures at Camp Lejeune, and in marital contacts of a few cases with no extra-marital exposure.

Because of the great interest in and importance of this disease and because of its almost certain venereal route of acquisition, it is desired that monthly morbidity reports include this disease as an additional diagnosis immediately after the venereal disease group and that the diagnosis number 1(B) XY Urethritis, Acute, Non-Gonococcal be employed. For the time being cases of non-gonococcal urethritis will not be included in the calculation of the venereal disease rate in monthly venereal disease reports but the number of cases should be stated separately in every such report, whether admitted to the sick list or not.

It is further requested that as many cultural studies be made as possible. Various authors have implicated organisms of the pleuro-pneumonia type, or "L" group, as etiologic agents in this disease. However, at least one study as yet unpublished, found this organism even more prevalent in normal urethras than it was in inflamed ones. The parasitic flagellate, Trichomonas vaginalis is found in some cases, and warrants a direct examination of a fresh suspension of discharge in all cases. When Trichomonas is found, a course of atabrine may be tried. Reports of cultures and observations of any type made with respect to this disease should be forwarded to Chief, Bureau of Medicine and Surgery, Code 7213. (Preventive Med. Div., BuMed)

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### Antabus in the Management of Chronic Alcoholism

Stimulated by the reports of Hald and Jacobsen (1948) and Martensen-Larsen (1948) on the pharmacology and clinical use of 'Antabus' (tetraethylthiuramdisulfide) in treating addiction to alcohol (see Medical News Letter, Vol. 13, No. 3, 11 February 1949), the authors have given this drug to most of the alcoholic addicts admitted to St. Patrick's Hospital (Dublin) since January, 1949.

In estimating the results so far obtained it must be remembered that alcoholism is a symptom of personality disorder and not a disease sui generis, and that the treatment of alcoholism aims at making the patient not a moderate drinker but a total abstainer.

The rationale of treatment with antabus is as follows: if the patient takes alcohol after ingestion of the drug, unpleasant symptoms develop which make it impossible for him to continue drinking. Since antabus is excreted slowly, these symptoms may develop as long as 3 days after a dose of antabus. They are so unpleasant that having once experienced them, few people will attempt to take alcohol again while they are having antabus.

The authors' technic has followed closely that of Martensen-Larsen (1948). On the patient's admission to hospital alcohol is withdrawn and the patient's health improved. The principle of antabus treatment is then explained to him and his cooperation is invited. It is both wrong and dangerous to use antabus secretly. The patient is given two 0.5 Gm. tablets of antabus each morning for 3 days; on the 4th day a test dose of alcohol is given so that the patient may experience the reaction. One or 2 glasses of beer provide sufficient reaction in most cases; spirits are only used if the reaction to beer is considered unimpressive. In a few cases the reaction is alarming and even dangerous; 1 death has been reported occurring in a controlled antabus reaction. Cyanosis and extreme dyspnea may develop, but are relieved by oxygen, which should always be at hand during a test. Occasionally a shock-like state with lowered blood-pressure develops; Bowman et al. (1951) suggest intravenous ephedrine sulfate for the relief of this condition. After the demonstration reaction the dose of antabus may be reduced to 0.5 Gm. or 0.25 Gm., whichever is found suitable.

Toxic reactions to antabus when not combined with alcohol are difficult to assess. In the early stages of treatment many patients mention symptoms including diarrhea, constipation, insomnia, somnolence, dizziness and palpitations. These symptoms are often rationalizations produced to justify stopping antabus. The most persistent complaint was one of drowsiness. Reduction of the dose usually relieved this.

Two patients (not included in the figures published here) developed acute confusional states which lasted several weeks, shortly after beginning to take antabus. The patients were manic-depressives who had had previous psychotic episodes. Martensen-Larsen (1951) has reported 3 cases of a manic state occurring in the early stages of treatment. Bowman et al. (1951) report definite psychotic reactions in 10 patients out of 100 undergoing antabus therapy, but they say: "These psychotic reactions are considered to be the probable result of the psychological effects of the withdrawal of alcohol, rather than the direct result of toxic effects of antabus."

Since January, 1949, 118 patients labelled "alcoholic" have been started on antabus therapy (103 men and 15 women). Most of them were between 30 and 50 years of age; only 10 were under 30 and 5 over 60. All were private patients, most of them being business men, farmers or from the professions. The only patients excluded were those with advanced cardiac or hepatic disease, 2 patients with diabetes and some who gave evidence of intellectual deterioration. It was felt that these last might drink impulsively to excess, and risk a serious or even fatal reaction. The results must therefore be assessed on the understanding that this is a heterogeneous group presenting a wide variety of psychiatric problems, varying from grossly unstable psychopaths to cases where the condition seemed largely environmental in origin.

Progress was reviewed in May, 1951 and definite information about the patient's condition was at that time obtainable in 71 cases. No case was included in which treatment had begun less than 6 months before the follow-up, and the total is spread over 2 years and 5 months.



As one would expect, most of the patients who took the trouble to reply to the letter had been impressed by the treatment, and spoke favorably about it. Most of those who had stopped taking their tablet had done so because they now felt "safe." A few had stopped because of various unpleasant symptoms, such as dyspepsia and drowsiness; several of these had done so on the advice of their physician. Most of those who had stopped said they would willingly take antabus again if they felt any danger of a relapse.

Of the 71 patients about whom there is definite information, 59 may be considered successes in that they are now abstinent. Of these, 36 have had no relapses of any kind, but 23 have on one or more occasions stopped antabus and taken alcohol. In all, 38 patients are still taking antabus regularly. Of these, 17 have had no relapses and 21 have had one or more slips. Twenty-one patients who are now abstinent are not taking antabus, and 19 of these have had no relapses. Twelve patients have stopped taking antabus and are regularly drinking again; 2 of these replied to the letter, one saying that he had given up antabus on the advice of his doctor and was sticking to wine and beer. The other said that he found it unnecessary and could now drink in moderation.

If only those 71 patients are considered about whom there is information, it means that in this series 83 % have been successful - 51 % completely so, and 32 % partially, in that their drinking is now controlled. These figures obviously give an unwarrantably flattering picture of the results of the treatment, because it must be inevitable that a high proportion of patients who did not reply to the letter are failures. However, even if all those who failed to reply are regarded as failures, the results mean a 50 % partially or completely successful result. Though it would be unfair to regard all the unknown results as failures (in 7 cases the authors' letter was undelivered because the patient's address was unknown), this group contains many patients whose prognosis was poor; and it is the authors' impression that the true result in the whole series approximates more closely to 50 % than to the more gratifying total of 83 %.

Advantages. (1) Antabus is a valuable aid in the management of alcoholic patients. (2) It provides the patient with a simple objective act to reinforce his decision and to protect him against weakening in the next 24 hours. A resolution which can be given immediate objective expression is easier to keep than one which must remain a subjective hope. (3) It shortens the period during which an alcoholic addict must remain in hospital, and enables him to be allowed greater freedom while in residence. It improves the relationship between patient and doctor. (4) It provides a routine procedure in hospital in the course of which a more accurate psychiatric assessment of the patient's personality can be made, and other forms of therapy directed to the conditions so found can be instituted.

Disadvantages. (1) An antabus reaction is not without danger. It should only be induced by one who has had experience of the complications which may ensue and has the means of resuscitation at hand. (2) The prescription of a pill is an easy matter. The treatment of a case of alcoholic addiction is a long and difficult task. Antabus is an aid to sound psychiatry, not a substitute for it. (3) Psychopaths, periodic drinkers and those with intellectual deterioration



constitute a large proportion of alcoholics; these are just the groups who are least benefited by antabus. (Lancet, 8 Dec. 1951, J. N. P. Moore & M. O'C. Drury)

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### The Effects of Combined Folic Acid and Liver Extract Therapy

Pteroylglutamic acid (folic acid) administered therapeutically induces hematologic remission in patients with pernicious anemia, but does not prevent the development or progression of subacute combined degeneration of the spinal cord. The high incidence, the explosive character of onset and the rapidity of progression of central nervous system involvement observed in patients receiving folic acid as the sole therapeutic agent led the authors to suggest (1948) that folic acid might actually exert a deleterious effect on the central nervous system of such patients. Clinical experience has confirmed their contention that the danger of central nervous system involvement prohibits the use of folic acid as the sole therapeutic agent in patients with pernicious anemia; but what role folic acid may play in precipitating nervous system disease still is unexplained.

From a practical clinical standpoint, as well as from theoretical interest, it is important to know the result of simultaneous administration of folic acid and liver extract (or vitamin B<sub>12</sub>). Observations are presented on a group of patients with pernicious anemia who were treated initially with folic acid and subsequently with both folic acid and liver extract or vitamin B<sub>12</sub>.

1. Folic acid, when administered alone, did not prevent the development or progression of subacute combined degeneration in 12 of 22 patients receiving this agent for from 12 to 25 months.

2. One patient with total gastrectomy and a macrocytic anemia developed subacute combined degeneration after 5 months of folic acid therapy.

3. Neurologic disease did not develop in 6 pernicious anemia patients treated with folic acid and liver extract for 3 and 1/2 to 39 months.

4. In 10 pernicious anemia patients with good nutrition, neurologic relapses did not progress when liver extract or vitamin B<sub>12</sub> therapy was instituted even though folic acid therapy was continued. In 2 patients with abnormal nutrition and complicating organic abnormalities, nervous system disease progressed after institution of liver extract therapy.

5. These observations are best explained by the theory that the hematologic and neurologic manifestations of pernicious anemia and other macrocytic anemias associated with gastrointestinal tract pathology and inadequate nutrition are due to a deficiency of more than one substance. The administration of folic acid may improve the hematologic status but induce a deficiency of another substance or substances, e.g., vitamin B<sub>12</sub>, which are essential for the maintenance of a normal blood picture and the integrity of the central nervous system. This deficiency will eventually result in the development of a suboptimal blood picture or subacute combined degeneration of the spinal cord, or both.



6. The hematologic status of patients with pernicious anemia is not maintained in a more satisfactory state by supplementation of liver extract or vitamin B<sub>12</sub> therapy with folic acid.

7. Folic acid therapy did not produce neurologic disease in patients with iron deficiency anemia who had free gastric hydrochloric acid in their gastric secretions and presumably sufficient intrinsic factor. It did not influence response to ferrous sulfate therapy.

8. Patients with sprue, nutritional macrocytic anemia and other macrocytic anemias associated with gastrointestinal tract pathology who are treated with folic acid should also be given supplemental liver extract or vitamin B<sub>12</sub> to insure against the development of nervous system disease. (Blood, Dec. 1951, R. B. Chodos & J. F. Ross)

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#### Irreversible Post-Hypoglycemic Coma

The clinical and metabolic disturbances occurring as the result of hypoglycemia may, in most instances, be completely reversed by the administration of glucose. The authors studied cerebral hemodynamics and oxygen utilization in 4 patients with persistent post-hypoglycemic coma in whom administration of glucose had no apparent influence on the condition, which terminated fatally. Although numerous cases of this type have been reported previously, quantitative studies of the circulatory and metabolic characteristics of the central nervous system in this condition so far have been lacking.

The 4 patients studied were known diabetics, each of whom had been admitted to the hospital on one or more other occasions because of acidosis or insulin reactions. On final admission 2 were deeply comatose due to moderately severe or severe hypoglycemia of unknown duration and previous degree; in the other 2 subjects hypoglycemia had been inadvertently induced during the course of vigorous treatment for diabetic acidosis. All patients, following demonstration of hypoglycemia, failed to show a clinical response to intravenous dextrose. In every case a thorough search for causes of continuing coma was without positive result. The patients remained in coma until death, for periods varying from 3 days to 3 weeks, during which time the blood sugar was maintained well above normal levels. Studies of cerebral hemodynamics and oxygen consumption were performed at intervals, using the nitrous oxide method of Kety and Schmidt as modified by Scheinberg and Stead. Electroencephalograms were recorded with a Grass 6-channel instrument.

It has previously been demonstrated that the depression of cerebral oxygen uptake induced by acute hypoglycemia is not accompanied by any significant change in cerebral blood flow. The progressive diminution in cerebral blood flow seen in 2 of these patients may have been at least in part attendant upon reduction in cardiac output consequent to 1 to 3 weeks of bed existence; an additional possibility, that of a homeostatic mechanism influencing cerebral blood flow in accordance with chronically reduced metabolic requirements, is only suggested

by the gradual increase in cerebral vascular resistance in these 2 patients but can be neither supported nor discounted by the data obtained in so limited a number of subjects.

The striking impairment of cerebral metabolic activity demonstrated in all patients could result only from (1) a diminished metabolite supply (either by reduction of glucose or oxygen concentration in the blood afferent to the brain, or by curtailment of the blood supply itself) or (2) depression of cerebral enzyme systems. In the cases under discussion the arterial sugar and oxygen contents were entirely adequate at the times of study, and in no instance did the cerebral blood flow show a reduction to the extent that the brain would suffer stagnant hypoglycemia or hypoxia. Hence, the remarkably low rates of cerebral oxygen consumption finally observed must by exclusion be attributed to impairment of enzymatic activity. It has been firmly established that the brain obtains its energy practically exclusively from the oxidation of carbohydrate; if deprived of this source of energy for an appreciable length of time, the cerebral cells will not only cease to function but may eventually undergo permanent changes in structure leading to irreversibly impaired activity or death. Certainly, in these 4 patients the process of permanent cerebral metabolic impairment was at least initiated by undoubtedly prolonged episodes of severe hypoglycemia; it is not unlikely that the situation may have subsequently been aggravated by intermittent periods of hypoxia caused by airway obstruction, so common in deeply comatose patients. (Am. J. Med. Sci., Dec. 1951, J. F. Fazekas, R. W. Alman & A. E. Parrish)

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### Pneumonectomy in the Treatment of Tuberculosis in Children

Pulmonary resection in tuberculous adults is universally accepted by thoracic surgeons in cases of thoracoplasty failure, tuberculous bronchiectasis, pneumothorax failure, destroyed lung, lower lobe cavity, giant cavity of upper lobe, bronchostenosis and tuberculoma.

Jones and Howard (Diseases of the Chest, December 1949) made reference to resection in 2 children, one of whom was 7 years old. The indications were similar to those for which the present authors have done pneumonectomy, such as pulmonary retraction with atelectasis and pneumonitis with secondary bronchiectasis.

The present paper deals with 4 resections performed at the Sanatório do Mandaqui, State of Sao Paulo, Brazil. The patients were 2 white and 2 Negro girls, varying from 8 to 13 years old.

In each of them the disease was on the left side with the clinical picture described by M. Tapia as "tísica cirrótico-atelectásica." In each case as seen from planigrams and anatomic-pathological specimens, total atelectasis was found with patent main and lobar bronchi. Atelectasis was due to obstruction of peripheral bronchi with chronic pneumonitis, secondary bronchiectasis and active tuberculosis.



Since the indication for pulmonary resection in children is not yet clearly established, and there was need for a carefully controlled experience it was decided to use this method in a few cases. It is only after the expiration of several years that the end results of treatment in such a few cases will be known.

It has been encouraging to observe with what frequency these young patients have made uncomplicated, smooth and early recovery during the immediate postoperative period with excellent healing. No complication occurred in the postoperative period, and each one experienced early recovery. All gastric washings became negative soon after pneumonectomy and remained so. (Dis. Chest., Dec. 1951, G. M. Botelho, A. Chapchap, H. L. Pereira & O. V. Cordeiro)

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#### A Preliminary Clinical Report on Caries Control With A High Urea Ammoniated Dentifrice

The investigators became interested in the high urea dentifrice as a caries control measure because of the intriguing possibilities afforded by a therapeutic dentifrice. It is well recognized and has been reported that good oral hygiene is a prerequisite of caries control. It is also logical to assume that if the cleansing action of a dentifrice can afford the additional virtues of an effective therapeutic agent which somewhere breaks the sequence of the pathology causing the caries lesion, the advantages of oral hygiene are thereby enhanced.

Numerous reports have appeared in the literature on the clinical and experimental aspects of ammoniated dentifrices. There have also appeared in the recent literature several reports that indicate that urea is a unique compound in the oral cavity. Lefkowitz reported that oral rinses with solutions of urea cause an elevation of the pH of tooth plaque required urea concentrations of at least 10 %. Urea is a unique compound in the way it penetrates tooth enamel. It has been generally assumed that the virtues of urea lie in the ease with which it is hydrolyzed to ammonia. There have been numerous reports on the mechanism of this hydrolysis.

This is an interim report of a 3-year project on the effect of an ammoniated dentifrice with a high urea content on the caries prophylaxis. The study was conducted at the Graham School, Yonkers, N. Y. The initial population consisted of 217 children of both sexes, most of whom had been in residence for at least 12 months. The ages ranged from 5 to 19 years. The mean age for the control group was 12.84 years and for the test group, 12.31 years. The children lived in cottages housing 20 to 25 in each. Each cottage had a house matron who carefully supervised the activities of the children in her cottage.

The entire population of the school lives under similar conditions. The diet for all children is the same. Therefore the dietary variations that influence a project involving children living at home were eliminated. During the previous year, all children had been using the same dentifrice. Most significant is that toothbrushing was supervised by the house parent twice daily, on

arising and on retiring, which most closely approximates the customary practice of oral hygiene. The diligence of each child with oral hygiene was therefore under daily supervision and laxity could be easily overcome.

The dental examinations preceding and during the experiment were made by Venti, eliminating subjective variations in the identification of caries lesions. Clinical and roentgenographic examinations were made every 6 months. The dentifrice pastes were supplied in plain white tubes identified with a number, and all the children in any one cottage used the same dentifrice. Neither the examiner, housemother, nor children had any knowledge of the significance of the numbers, and both the ammoniated test and placebo control dentifrices looked and tasted exactly alike. The population was divided into a 3/4 test group and a 1/4 control group. Morning and night brushing was done using the test ammoniated and the control placebo dentifrices.

There have been no observed effects on the oral mucosa of any of the children on the project. Lefkowitz had previously reported that the high urea dentifrice formula had no effect on the oral mucosa in a biopsy study. These observations were confirmed and demonstrated that daily use of an ammoniated dentifrice for a prolonged period of time has no effect on the oral mucosa.

A marked reduction in caries experience was observed in the test dentifrice group. The greatest reduction occurred in previously noncarious permanent teeth, where a 60 percent reduction in caries in the test group versus the control group was observed. The caries reduction in all teeth, both deciduous and permanent and carious and noncarious, varied between 50 % and 60 %. The reduction in caries incidence observed was obtained with the customary practice of twice daily brushing on arising and on retiring. (Oral Surg., Oral Med. & Oral Path., Dec. 1951, W. Lefkowitz & V. I. Venti)

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### The Present Status of Silicosis

The roentgenological examination of suspected silicotics is the most important single means of diagnosing silicosis. Unfortunately it requires long experience and each expert has more or less adopted his own means of classification.

The classification adopted for one type of industry will not prove suitable for another type. The legal implications regarding silicosis, in view of compensation claims, have in a sense placed an additional burden on the roentgenologist. As a consequence of all these factors, an immense amount of literature has been built up in the field of pneumoconiotic radiographic interpretation that can scarcely be compressed into a general review. Nonetheless it may be of interest to note several recent surveys in the field of silicosis. These surveys outline the roentgenographic procedure followed in establishing evidence of silicosis.

In a recent study of foundrymen in 18 foundries in Illinois made by the Division of Occupational Health of the United States Public Health Service and



the Illinois Department of Public Health, significant pulmonary fibrosis was found in 9.2 % of the foundrymen. In 1.5 % of the men, there was found nodular fibrosis, which in general had required 14 years or more of exposure in order to develop.

A survey of the granite industry in Germany and Austria in which 3,880 persons were examined has been reported by Rohrl. Silicosis was found to be present in 8.1 % of the individuals examined. The later stages of silicosis were found to develop in this industry only after 28 to 45 years of exposure.

Yamamoto has reported a survey of silicosis in the metal mines of Japan. A total of 23,823 workers were examined, and the number of silicotics totaled 11.51 %. The author does not specify the kinds of mines in which these studies were made, although some indication of job-breakdown is given and the incidence of silicosis is indicated in such jobs as timbering and crusher-sorting.

Meiklejohn reviewed 750 necropsies in the pottery industry and 275 necropsies in a group of occupations involving exposure to siliceous dust resulting from the use of sandstone. These cases were tabulated with special reference to tuberculosis, heart failure and primary bronchial carcinoma.

Vigliani reports the radiographic finding resulting from the x-ray examination of 143,000 persons engaged in dusty occupations. Stone and granite workers showed a silicosis incidence of 9.3 %; workers in steel foundries, 5.9 %; quarrymen, 12.8 %, and cement workers, 5.8 %. It would appear that the last will be of interest in this country where, it will be recalled, Gardner and others several years ago conducted a survey of 17 widely distributed cement plants with a total of 2,278 employees. Only 8 of these workers showed evidence of nodular fibrosis attributable to dust, and in 6 of the 8 individuals prior exposure to silica dust was presumably responsible for their condition.

Further support regarding the absence of silicosis in cement workers is given by the study of Steinert and Moe, who conducted an x-ray study of the lungs of 453 male factory workers, all of whom excepting 14 were directly employed in cement plants and including 74 who had been employed in this industry for more than 25 years. None of the workers exhibited any symptoms of silicosis, and these investigators conclude that the cement industry is not a silicosis hazard.

McLaughlin and his associates have recently published a complete study of silicosis in iron and steel workers in Britain. This report is too extensive to more than record for reference.

In general, it may be said that owing to better protective measures the proportion of cases of silicosis occurring in industry in comparison with the number of workers exposed has diminished within the present generation. Nevertheless, silicosis still remains one of the most important of the diseases of industry. (Occup. Health, Jan. 1952, L. T. Fairhall)

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### Breast Biopsies

In a study of 432 consecutive breast biopsies over a 10 year period the authors' data indicate that when a patient presents herself to the physician for an examination of a suspected breast mass there is 1 chance in 6 that the mass will be malignant; the ratio increases in the younger age group and approaches equality in the 6th decade of life. The authors' percentage of malignancy is low as compared to other series. Of the 77 instances of malignancy in the present series there was no definite increase in the number of 5-year survivals when compared with much larger surveys, the present cases falling into the stage 1 or stage 2 categories. This indicates that breast biopsy is valuable from a negative viewpoint; it rules out malignancy but does not change its prognosis as to duration of life.

The pathologic diagnoses were not remarkable save for the high incidence (24) of benign lipomas. The question was raised as to whether the biopsied specimen was inadequate as to size or incorrectly localized at surgery. This did not prove to be the case as a follow up study showed that in all 24 instances no evidence of malignancy subsequently occurred (to date).

Although the hormonal influence of the female generative organs on the breast tissue have been adequately stressed, the relationship of masses in the breast to menstrual, gynecologic and obstetric history in this series did not prove to be diagnostically significant, with the exception that the greater percentage of patients with malignancy were past the menopause as compared to those whose masses were benign. On the other hand, there was a family history of cancer in 20 % of the total number of cases. There were, however, only 3 instances in which a genetic relationship between mother and daughter was present as to carcinoma of the breast.

The ability to make a correct gross diagnosis of a biopsied breast specimen approaches 80 % accuracy in the hands of a surgeon well trained in pathology. The use of frozen section can add very little more to that percentage because of limitations imposed by the thickness of section, size of tissue which can be adequately cut in a frozen state by microtome and less than ideal absorption of tissue stains. In addition, when a lesion of questionable gross malignancy is present, the slight delay in time between the less accurate frozen section and the more accurate paraffin section does not warrant immediate definitive therapy. Consequently, when the gross specimen does not lend itself to an inspection diagnosis, it is better to close the biopsy wound primarily and wait 48 hours for the paraffin section report; this, of course, relegates the frozen section to the background as an accurate means of early diagnosis but it does not lose its place as an excellent teaching method for breast pathology. On the other hand, when the gross diagnosis of cancer can be made by inspection (and this can be done in the greater majority of cases), logical application of radical surgical procedures while the patient is still under the anesthetic is indicated. This is where the experience and training of the surgeon come to the fore and enable him to give the best possible service to his patient. (Am. J. Surg., Dec. 1951, L. G. Khedroo, P. A. Casella & A. F. Cipolla)



Acute Vascular Lesions of the Brain Stem

Pontine hemorrhage frequently has been noted at necropsy in cases of supratentorial tumor. This has not been an uncommon finding at the Mayo Clinic during the last 5 years, but prior to 1940 pontine hemorrhage rarely was noted at necropsy in cases of tumor of the brain. This study of vascular lesions of the brain stem was undertaken to aid in the clinical recognition of such lesions in the presence of other intracranial lesions and to investigate the possible mechanisms causing the hemorrhage.

The results of this study suggest that the syndrome most characteristic of an acute vascular lesion of the rostral portion of the brain stem consists of the sudden onset of coma, hyperthermia, tachycardia and rapid, difficult breathing. The patient's condition deteriorates steadily, and death invariably occurs. In the series studied this syndrome was present even when other lesions of the brain and meninges existed. The results of this study, therefore, suggest that hemorrhage into the brain stem often is the cause of death in cases of brain tumor, meningeal hematoma, cerebral abscess and cerebral hemorrhage. The evidence indicates that hemorrhage of the brain stem complicating supratentorial tumor, hemorrhage or abscess may be diagnosed prior to death. Recognition of the signs and symptoms is definitely possible.

It has been established that paradoxical pyramidal signs, decerebrate rigidity, imbalance of the extraocular muscles and pupillary changes are manifestations of tentorial herniation. The more profound changes in the vital signs may also be encountered in cases of tentorial herniation. However, deep coma, hyperthermia, tachycardia and rapid, difficult breathing usually occur in cases of hemorrhage in the brain stem. Tentorial herniation and bleeding into the brain stem coexisted in most of the cases of supratentorial space-occupying lesions. Dysfunction of the brain stem may precede the actual hemorrhagic lesions in cases in which compression and obstruction to the flow of blood are present.

Surprisingly, convulsive movements ushered in the onset of the changes in vital signs in about one-fourth of 122 cases. The seizures varied in severity from isolated twitching in one extremity to grand-mal convulsions.

The results of this study suggest that acute vascular lesions of the brain stem produce a clinical picture which may be recognized prior to death. A study of the site of the hemorrhage in cases of supratentorial space-occupying lesions suggests that the hemorrhage is the result of, or associated with, venous stasis caused by interference with the return of blood from the rostral part of the brain stem into the system of Galen. The interference with the return of venous blood probably occurs at the level of the tentorium cerebelli.

There also is indication that acute lesions within the brain stem may give rise to disturbances in the autonomic nervous system not unlike those caused by hypothalamic dysfunction. (A. M. A. Arch. Neurol. & Psychiat., Dec. 1951, B. W. Cannon)

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### Surgical Treatment of Achalasia

Increasing recognition through greater awareness has demonstrated that the incidence of achalasia or cardiospasm is much higher than earlier reports would indicate. It should be suspected in the patient who complains of dysphagia, this being the most common symptom and occurring second only to carcinoma of the esophagus as a cause for dysphagia.

The term achalasia (without relaxation) evidently originated in Guy's Hospital, London, around 1913 when Hurst found that a rubber tube filled with mercury could be dropped into the stomach and withdrawn without meeting spasm or other appreciable resistance. From this and other studies he concluded that dysphagia was caused by failure of the sphincter to relax rather than spasm of the cardia. Of the several theories propounded on the etiology of achalasia, none has been proved. An interesting observation by Rake on autopsy material from 3 patients who had had achalasia showed destruction of the ganglia and connecting nerves of Auerbach's plexus in the region of the sphincter and to a lesser degree in the dilated wall of the esophagus. Other studies have shown the same findings with the suggestion that the ganglionic degeneration is due to dilatation, inflammation and fibrosis of the esophagus secondarily. The same contention has been advanced recently in the case of Hirschsprung's disease (congenital megacolon).

Achalasia accounts for about 20 percent of dysphagia, rather an appreciable incidence. No age group is exempt, most patients presenting themselves in the 3d and 4th decades. Females are said to be affected twice as commonly as males.

Diagnosis of achalasia is chiefly by symptoms and roentgenologic examination since physical findings and laboratory examinations give little direct information. The symptom triad of pain, dysphagia and regurgitation of food is significant. The pain of achalasia in contrast to carcinoma of the esophagus may be rather severe. It is usually substernal and may radiate to the neck, to the angle of the jaw or to the mastoid region. It may come at any time but is more common during or after eating. Weight loss is common. Solid foods frequently may be easier to swallow than liquids. The patient may try to wash food down with liquids. Cold liquids are most poorly tolerated. Occasionally the spasm may be relieved by swallowing hot water. Regurgitation increases with the duration of the affliction. There is some danger present in regurgitation during sleep. Emotional conflict seems to increase the symptom triad. While esophagoscopy is not recommended routinely due to possible trauma of the dilated friable esophagus, it may be done if there is uncertainty as to the presence of carcinoma.

The usual form of treatment has been the repeated use of bougies or hydrostatic dilators of various types. Psychotherapy in an occasional early case may prove beneficial, but there is general agreement of its uselessness with established organic changes. Drugs of every kind are almost useless. Maingot states that medical management will cure 70 %, with improvement in an additional 20 %. Vinson obtains complete and permanent relief from symptoms by passage



of dilators or a bag in 75 % of patients. No author has stated how long treatment is continued before resorting to surgery, but most patients are treated by only a few dilatations.

In establishing the criteria for operability, there are several considerations. In any case in which there is doubt as to the diagnosis, surgical exploration is imperative to rule out carcinoma at the cardia or lower end of the esophagus. If there has been no response to a series of dilatations, operation is indicated. Dilatation may be hazardous when there is great dilatation of the esophagus, the flask-shaped deformity which may sag and stretch.

Several types of operative procedure have been described. The technic used by the authors is that of Wendel which is comparable to the Heineke-Mikulicz pyloroplasty. A single longitudinal incision into the lumen of the lower esophagus is continued through the anterior wall of the cardia of the stomach. This longitudinal incision is then retracted laterally and sutured transversely to perform a cardioplasty. (J. Missouri M. A., Dec. 1951, W. A. Bowersox & R. S. Kieffer)

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#### Metastasis to the Pineal Body

Metastasis to the pineal body, to judge from the literature, is rare. Warren, in 1936, referred to 3 previous reports and presented his observations in 2 additional cases. The present authors have found 11 other cases, bringing the total to 16. Their interest in the question was stimulated by the chance observation of 2 instances of metastatic involvement of the pineal body. A more systematic survey of available pathologic material was then undertaken to ascertain the frequency of the finding.

The purported rarity of metastasis to the pineal body is not borne out by the authors' findings. Five instances of metastatic involvement of this structure were found among 130 brains from patients who died of disseminated neoplastic disease.

Of these 5 cases, 3 concerned men and 2 women, although the material was greatly weighted with male patients. The 3 men had had bronchogenic carcinoma and the 2 women died of carcinoma of the breast. All 5 had multiple visceral metastases, and 2 had clinical and pathologic evidence of intracranial neoplastic involvement.

In 3 instances the metastases represented apparently isolated transference of tumor cells to the pineal body without other involvement of the brain or the meninges. These 3 cases showed massive neoplastic replacement of the pineal body. In contrast, the 2 cases in which the brain and meninges were involved showed only microscopic seeding of the pineal body by tumor. In none of the patients was there clinical evidence suggestive of involvement of the pineal body. This would confirm the observation that pineal lesions produce symptoms only by compression of neighboring structures.

Thus, isolated pineal metastases were found in 3 % of 98 brains otherwise free of tumor, and in 6 % of brains which had multiple sites of intracranial metastases. The authors conclude that respecting metastatic spread of neoplasm the pineal body has a feature that distinguishes it from a fortuitous site of tumor cells disseminated to the central nervous system. A plausible mode of localization of pineal metastasis is suggested by consideration of the blood supply of the pineal body. Arteries to this structure are derived from the posterior choroidal branches of the 2 posterior cerebral arteries, which have the vertebral arteries as their source. Since the central nervous system in the area of the pineal body does not possess a lymphatic vessel system, the only alternative course of tumor emboli might be through the vertebral veins, as described by Batson. (A. M. A. Arch. of Path., Dec. 1951, P. Ortega, N. Malamud & M. B. Shimkin)

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### Secondary Carcinoma of the Phalanges

Two cases of secondary carcinoma of the phalanges in the hand are reported. Both were of special interest because of the roentgenologic findings. In the first case the phalangeal lesion was secondary to carcinoma of the nail bed; in the second, it was metastatic from bronchogenic carcinoma.

Like secondary carcinoma from pressure and direct invasion, metastatic carcinoma of the phalanges is uncommon. The authors have found 7 references in the literature, with mention of 13 cases. In most instances the metastases involved the phalanges of the hands. Primary sources included: parotid tumor, 1; carcinoma of the breast, 2; bronchogenic carcinoma, 6; hypernephroma, 1; carcinoma of the uterus, 1; source not given, 2.

Clinical, roentgenologic and pathologic details are available in only 6 cases, including the authors' of phalangeal metastases from bronchogenic carcinoma. In this group, 5 patients were men. Ages ranged from 49 to 68 years. Complaints referable to the metastatic lesion were more often rather sudden in onset than gradual. In 4 patients such complaints preceded the pulmonary symptoms.

In every case the metastatic lesion presented itself as an inflammatory process, with pain, swelling, redness, tenderness, and pulsation, so that the clinical impression comprised "whitlow," "paronychia," "infected bunion," "inflammation," "felon with osteomyelitis."

X-ray films consistently showed bony destruction, occasionally with soft-tissue changes. In 1 case new bone formation was noted. The adjacent joint was never affected. Involved bones were as follows: distal phalanx of the left fifth finger, of the left fourth finger, of the left middle finger, of the left thumb, and proximal phalanx of the right thumb and of the left large toe. In 3 cases bone other than the phalanges, in the feet and elsewhere, revealed metastatic lesions.



The pathologic diagnosis of the phalangeal lesion was made first by aspiration in 3 cases, by curettage in 1 case, upon amputation in 1 case, at autopsy in 1 case. The predominant histologic type of tumor was squamous-cell carcinoma. In 3 patients amputation was done for palliative effect; in one patient, x-ray treatment caused a decrease in size and tenderness of the lesion. Bronchogenic carcinoma as a primary source was proved by autopsy in 2 cases and through bronchoscopic biopsy and sméar in 2 cases. In the remaining 2 cases the diagnosis was based on clinical and x-ray evidence. (Radiology, Dec. 1951, F. W. Brason, E. G. Eschner, S. Sanes & G. Milkey)

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### Postural Backache

The typical position assumed in poor posture of advanced degrees is familiar to all. The head protrudes, the shoulders are rounded and dropped, the chest is flat and the thoracic position of the spinal column has an increased posterior convexity or kyphosis. The lumbar lordosis is exaggerated and the abdomen is protuberant, particularly in its lower half. The pelvic inclination is increased. Some persons have a flattened lumbar lordosis and compensation takes place by flexion of the hips. The knees are slightly flexed and the feet are pronated. All degrees of these postural aberrations are encountered.

Many people habitually assume, at work or at other times, positions of great mechanical disability and sooner or later under the stress and strain the body tissues rebel and backache results. Perhaps the most important feature of this type of affection is the great uncertainty of diagnosis, and to this fact may be attributed the improper treatment that has been meted out in the past.

One common cause of chronic strain in the lower portion of the back is a sagging or protuberant abdomen which, by its weight and its downward and forward pull, tires the muscles and leads to increased tension on the ligaments supporting the lumbar portion of the spinal column. The postural backache of pregnancy is of course explained on the same basis.

Just as apt to have trouble as the obese persons with the protuberant abdomens are the tall, slender persons with poor posture. These people usually hyperextend the lumbar regions of their spinal columns. The muscles and ligaments of a tall, thin asthenic individual can be compared to the guy wires of a segmental smoke stack. Stronger and heavier wires with a wide base are required to support a tall stack than a short, squatty one. Yet, in the case of the spinal column, the muscles of the short individual so often are better developed. The long, slender type of back is unable to withstand an increased strain for any length of time. At least one large industrial company reportedly refuses to employ for hard labor any man more than 5 feet 10 inches tall (177.80 cm.) in height, but tries to obtain men of about 5 feet 8 inches (172.72 cm.) in height with a square, stocky build.

Postural strain is precipitated by certain occupations. Surgeons and dentists are especially liable. The backache produced by bending over work can often be quickly relieved by placing a stool on a platform under one foot. The elevation of one foot tends to straighten out the lumbar region and so relieve the strain.

It is obviously necessary before ascribing a patient's complaint to posture alone to rule out by careful clinical and laboratory study any other possible causes for the symptoms. Patients having postural backaches may obtain gratifying results by conscientious application of body mechanics together with reduction of weight if indicated. A light corrective brace may be worn between exercises as a temporary expedient, but this should be discarded as soon as possible lest the patient depend on the support alone for relief and thus only increase muscular atrophy. The patient with weak back muscles and poor posture should sleep on a firm, straight, nonsagging mattress, and only one light pillow should be used beneath the head.

With physical improvement an increased mental independence and vigor develop which make the months of muscle training a distinctly worth-while investment. (Proc. Staff Meet. Mayo Clinic, 5 Dec. 1951, P. R. Lipscomb)

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#### Effect of Maternal Smallpox Vaccination During Pregnancy on the Eyes of the Infants

During the past decade, there has been considerable interest in the effect of maternal virus diseases during pregnancy on the eyes of the infants. Gregg reported 78 cases of congenital cataract in the offspring of mothers who had rubella during the first trimester of pregnancy. No previous studies could be found on the relationship of maternal vaccinia during pregnancy to the infant's eyes. Therefore, an investigation of the eyes of children whose mothers had been vaccinated for smallpox during pregnancy seemed warranted.

During the spring of 1947, about 5,000,000 persons in the New York City area, including many pregnant women, were vaccinated. Thus, an opportunity was presented to study the infants who were born from the mothers who had been vaccinated.

After the present investigation had begun, Greenberg and his associates reported the relationship between maternal smallpox vaccination and its effect on the offspring. They obtained card reports from various clinics and hospitals on 4,172 women who were vaccinated during the first trimester of pregnancy. These women gave birth to 68 children with malformations, an incidence of 1.63 %.

A control, nonvaccinated group of 2,186 women in the first trimester of pregnancy gave birth to 30 malformed infants, an incidence of 1.37 %.

This study would indicate that there is no effect on the embryo from smallpox vaccination of women in the first trimester of pregnancy. These investigators



recorded 2 infants with congenital cataract and associated congenital heart disease from their card reports.

Since the above study was compiled by different groups of men at several hospitals and clinics, and in relation to all types of congenital malformations, it was thought worthwhile to examine only the eyes of infants whose mothers had been vaccinated for smallpox during pregnancy to see if any ocular anomalies existed.

Letters were sent to 250 women who had had smallpox vaccinations during pregnancy. The eyes of all the infants born to these 250 women were examined shortly after birth and did not show any evidence of congenital cataract; 71 women responded, bringing 74 children, including 3 sets of twins. All of these children had been delivered at the New York Hospital. In this study, 21 women were vaccinated in each of the first 3 months of gestation. Eight women vaccinated in the second trimester were in their fourth month of pregnancy.

As well as could be ascertained, all of these women had good vaccinia reactions.

The eyes of 59 white and 15 colored children were examined ophthalmoscopically; 32 were male and 42 female. If indicated, a more complete eye examination was done. These children were all just slightly under or over 2 years of age, and were cooperative enough to examine without the use of anesthesia. Media and fundi were inspected in a darkened room without the use of mydriatics.

The eyes of all these children were examined shortly after birth and again at about the age of 2 years. One male child was found to have a mild left blepharoptosis. No other ophthalmologic abnormalities were noted.

No sign of congenital cataract was found in the children of mothers who had been vaccinated for smallpox during pregnancy. No evidence was found that smallpox vaccination of women during pregnancy had any harmful effects on the eyes of the infants.

An explanation may be that the relatively large variola virus does not pass through the placental barrier. The virus responsible for rubella has not been isolated as yet, but is considered to be much smaller than the variola virus and consequently may pass through the placental barrier. (Am. J. Ophth., Dec. 1951, S. S. Snyder)

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#### Labor and Delivery After Cesarean Section

The results of 943 consecutive viable pregnancies following cesarean section from 1932 to 1950 are presented. There was a 1.6 % incidence of uterine scar rupture with 1 % complete rupture.

Vaginal delivery in carefully selected and observed cases is a relatively safe procedure under the author's methods of management. There was no maternal mortality in this series attributable to rupture of a cesarean scar. There was, however, one case of maternal death from hemorrhage following an elective repeat cesarean section. The transverse lower segment type of cesarean

section is much safer (about 4 times) for future pregnancies. There were no infants lost due to rupture of a low transverse scar, and no complete ruptures of this type.

Maternal morbidity is still  $7 \frac{1}{2}$  times greater in repeat cesarean sections than in vaginal delivery. Fetal mortality is comparable in both methods. The same modern factors, such as blood, antibiotics, chemotherapy, anticoagulants and better-trained obstetricians, that make a cesarean so safe these days, make a vaginal delivery even safer. Prophylactic antibiotics and chemotherapy make a trial of labor safe for either vaginal or abdominal delivery. The rise to 41 % vaginal deliveries after previous section in the year 1950 with no maternal mortality or morbidity, no ruptures and no fetal mortality indicates the increasing safety of this trend.

In 50 % of the cases of scar rupture there had been fever or infection following the previous section. Palpation of the uterus abdominally is not usually a reliable index of defect in the uterine scar; nor is subjective tenderness trustworthy as a sign of impending rupture. Of 6 cases of repeat section for "impending rupture," 4 showed no evidence of rupture of the scar.

There was in this total series, 47 % fetal mortality in the cases in which the scars ruptured. All 7 fetal deaths were in the group of catastrophic complete rupture of the classical type scar. Three of the infants were lost at rupture before the 39th week. Unfortunately, little can be done effectively to prevent the cases of rupture occurring prior to the 36th to 38th week of gestation, except to do as few primary classical sections as possible. If all cases of previous section were routinely scheduled for repeat section 2 weeks from term, there would still be a few spontaneous ruptures prior to this time. If the previous classical scar appears intact and sound at repeat section, a low transverse type operation should be done.

Routine x-ray placentography is suggested to detect the location of the placenta in those cases in which vaginal delivery is contemplated, because of the plausible concept that implantation over the scar area is more conducive to rupture, particularly of the classical scar. Review of the scar material, both gross and microscopic, in the series was inconclusive, there being evidence of mostly fibrous union in some, apparent myometrial regeneration in some, and combinations of both types in others.

Labor following a primary section with no labor is essentially nulliparous.

The character of the individual labor, position, size of the fetus and pelvic morphology may be deciding factors as to mode of delivery, regardless of the cesarean section scar.

The author requests better judgment regarding indications for cesareans in the primigravida, i.e., at least a trial of labor when there is not an emergency for either the mother or fetus.

If enough routine elective repeat sections are done, there must be considered the occasionally obtained premature infant who fails to survive, as well as the minimal though still definite maternal mortality risk of cesarean section. (Am. J. Obst. & Gynec., Dec. 1951, A. L. Wilson)



### DDT Resistance in Korean Body Lice

Contrary to expectation, routine application of 10 % DDT powder to a large group of Korean military personnel during the winter and spring of 1951 resulted only in an increase of infestation with the body louse (Pediculus humanus corporis Deg.). The method used was essentially that employed by Soper et al. in 1943, except that power dusters were used. The dust is applied without the removal of clothing. The DDT came from various sources, including a large stock of American manufacture which had been in storage for 5 or 6 years. However, tests with mosquito larvae demonstrated that it had retained its full insecticidal potency. The diluents most commonly used were talc and pyrophyllite.

The group of men treated increased rapidly in size during the first 3 months, then remained relatively stable. By the end of the second month it was possible to replace clothing worn by new arrivals with uninfested clothing. The number of layers of garments to be treated was thereby materially reduced. Living conditions were steadily improved so that bathing and clothes-washing facilities became readily available by the fourth month.

Despite these improvements, and the weekly application of DDT louse powder to all personnel, the percent of infested persons increased steadily. During the month of May, the fifth month of routine application, over 34,000 pounds of 10 % DDT powder were used. The percentage of infestation by weeks for the month of May as determined by a random check of about 3 % of the men was 35.5, 49.2, 51.0 and 42.4, respectively.

To determine whether more frequent applications would give better results, a segregated group of 40 infested men was treated every third day for 15 days. Another group of 40 men, 20 of whom were infested and 20 apparently uninfested, were treated similarly and housed together in a separate tent. On the fifteenth day 35 were still infested in the first group and only 5 remained uninfested in the second group.

Impregnation of clothing by immersing in a 2 % DDT-xylene emulsion was somewhat more effective, but not sufficiently so to merit adoption as a control measure. In a segregated group of 84 men whose effects were so treated, daily counts showed that the percent of infested individuals dropped from 68 % before treatment to 17 % on the eighth day after treatment, then increased to 38 % by the fourteenth day. Observations were discontinued at this point because it was not practicable to keep the group segregated for a longer period.

In laboratory tests 3 samples of 10 % DDT louse powder applied to cloth at the rate of 0.021 Gm. per square inch gave mortalities for adult lice which ranged from 33 to 65 % in 24 hours, with 27 to 45 % remaining normal. Nine such tests were performed, using 20 lice per test. A fourth sample containing 5 % DDT powder in pyrax, and known to be of acceptable potency against a standard laboratory strain of body lice, was tested in a similar manner. Ten tests using 20 lice each gave an average mortality of 46 %, with 34 % remaining normal after 24 hours of exposure. When lice were confined within treated sleeves, which could be worn and thus permit normal feeding, there were 41.5 % normal test lice and 48 % normal controls at the end of 48 hours in one test and

60.5 and 61.7 % respectively, in a second. Under similar test conditions a powder containing 0.25 % DDT gives 100 % mortality in a standard laboratory strain of lice. The second test utilized the sample of proved potency previously mentioned. Four hundred lice and 10 subjects were employed in each test.

Lice were reared through their complete life cycle and produced a large number of viable eggs on cloth impregnated with 0.1 % DDT solution in acetone. Cloth impregnated with a .05 % solution is lethal to a standard laboratory strain. The solution of DDT used to impregnate the cloth was tested against the fourth instar larvae of Anopheles sinensis, a highly sensitive insect, and in two trials gave 83 and 90 % mortality, respectively, in 24 hours, in a concentration of 1 part in 10 million. This DDT had been in storage as a 10 % powder in talc for 5 years. Chemical analysis gave the DDT content as 10.4 % by weight.

Since 1947 DDT resistance in house flies has been reported from numerous localities where DDT has been in use. Laboratory experiments have demonstrated that resistant strains can be developed by selective breeding, and this has been interpreted as indicating that such a process occurs in nature. It seems probable that an analogous condition exists in the body louse. Hitherto, great dependence has been placed on DDT for the control of typhus. It now appears to be of uncertain value, being unsuitable for this purpose in some localities. (Cdr. H. S. Hurlbut (MSC) USN, Capt. R. M. Altman (MSC) USA & 1st Lt. C. Nibley, Jr. (MSC) USA.

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#### Course in Aviation Medicine

The Bureau of Medicine and Surgery announces a class in Aviation Medicine which will convene at the U. S. Naval School of Aviation Medicine, Naval Air Station, Pensacola, Florida, on 7 April 1952. The course consists of approximately 6 months of academic instruction in aviation medicine and flight indoctrination training, and leads to the designation of successful candidates as U. S. Naval Flight Surgeons.

The class will be limited to 30 students and is open to medical officers of the Regular Navy and Naval Reserves in the ranks of Lieutenant Commander and below. Subsequent classes will be convened approximately every 3 months, and acceptable candidates whose applications have been received after the 7 April class quota has been filled shall be enrolled in the next convening class.

Medical officers who wish to apply for the course in Aviation Medicine should do so by an official request via the chain of command to the Chief of the Bureau of Medicine and Surgery which shall contain this service agreement, "If this request is approved, I agree to remain on active duty for one (1) year upon completion of the course in Aviation Medicine, or for six (6) months beyond my currently obligated service, whichever is longer." (Aviation Med. Div., BuMed)

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Course in Medical Aspects of Special Weapons and Radioactive  
Isotopes

The second course for the fiscal year 1952 in Medical Aspects of Special Weapons and Radioactive Isotopes is scheduled to convene at the U. S. Naval Medical School, Bethesda, Maryland, on Monday, 11 February 1952, and continue to 16 February 1952.

The course will present problems likely to be confronted and technics to be employed by medical and dental officers in the field of radioactivity. The subjects will be presented by speakers of outstanding prominence in their specialties; hence, it is assured the presentation will be interesting and informative to all Medical Department officers.

This course is conducted primarily for the benefit of inactive Reserve Medical Department officers; however, a limited number of officers of the Medical Department on active duty may be given "Authorization Orders" (no expense to the government) in accordance with paragraph 3 of BuPers-BuSanda joint letter of 30 November 1951. Inactive Reserve Medical, Dental, Medical Service Corps, and Nurse Corps officers residing in the 1st, 3rd, 4th, 5th, 6th, 8th, 9th Naval Districts and Potomac River Naval Command who desire to attend this course should submit their request for 6 days training duty to the Commandant's office at the earliest practicable date. Meals and a limited number of sleeping quarters will be available. Quarters will be available on a first come, first served basis.

It is desired to invite inactive Reserve personnel's attention to the fact that acceptance of orders to attend these courses WILL NOT, in any way, increase the possibility of involuntary recall to active duty of the personnel concerned. Therefore, inactive Reserve Medical Department personnel are encouraged to take advantage of this opportunity to attend this course on active training duty orders in a pay status. (Reserve Div., BuMed)

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List of Recent Reports Issued by Naval Medical Research Activities

U. S. Naval School of Aviation Medicine, U. S. Naval Air Station, Pensacola, Fla.

Preliminary Studies on the Ease With Which Pilots Can Grasp and Pull the Ejection Seat Face Curtain Handles, NM 001 059.22.02, 6 November 1951.

The Clinical Symptomatology of Coronary Insufficiency, NM 000 059.06.06, 15 November 1951.

Naval Medical Research Institute, NNMC, Bethesda, Maryland

The Distribution of the Somatic Antigen of a Gram-Negative Organism in Normal and Tumor Bearing Mice, NM 005 048.09.01, 6 June 1951.

Some Further Infrared Absorption Studies on the Proteins of Muscle, NM 000 018.04.05, 21 June 1951.

The Relation of Body Water Content to Body Build in a Group of Healthy Men, NM 004 006.03.07, 28 July 1951.

An Efficient Method for Exposure of Mice to Cercariae of Schistosoma mansoni, NM 005 048.02.26, 15 August 1951.

The Sequence of Pathologic Changes in Swine Exposed to the LD<sub>100/30</sub> of Total Body Super-Voltage X-Radiation, NM 006 012.04.38, 24 August 1951.

Effects of Injection of Radiogallium (Ga<sup>72</sup>), NM 007 081.06.10, 15 September 1951.

A New Criterion for the Selection of Compounds for Curative Activity in Plasmodium vivax Malaria, NM 007 081.01.09, 4 October 1951.

U. S. Naval Medical Research Unit # 3, Cairo, Egypt

Suggestions for the Measurement of Variation in the Culex pipiens Complex, NM 005 050.30.03, 15 August 1951.

Aureomycin in Tropical Diseases With Special Reference to Amebiasis and Brucellosis, NM 007 082.11.02, 9 October 1951.

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#### Out-Moded Test Materials

It was recently brought to the attention of the Director, Aviation Medicine Division, BuMed, that some out-of-date scoring keys formerly used for scoring Flight Aptitude Rating tests are still in existence. These scoring keys were ordered to be destroyed when responsibility for scoring these tests was transferred to the Bureau. Attention of flight surgeons is called to paragraph 6, BuMed Circular ltr No. 50-57 dated 31 May 1950:

"Superseded materials shall be destroyed in accordance with current regulations. This applies to all copies of ACT Forms 1 and 2, and MCT Forms 4 and 5, and all Confidential materials (Examiner's manuals and scoring keys)."

This order does not, of course, apply to the revised test materials which were distributed to medical activities of the Naval Air Reserve Training Command in August 1951. These materials included:

ACT Forms 3 and 4, with scoring keys; MCT Forms 6 and 7, with scoring keys; BI Revised W scoring key.

It is suggested that all activities concerned examine stocks to assure compliance. (Aviation Med. Div., BuMed)

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From the Note Book

1. The first joint meeting of the Armed Forces Medical Policy Council of the Department of Defense and the Health Resources Advisory Committee of the Office of Defense Mobilization was held on December 17 at the Pentagon in Washington. Topics discussed at the meeting included a uniform release program for reserve medical officers, problems arising from the "doctor draft law", the status of basic science personnel under the "doctor draft law", the nurse recruitment program in the Armed Forces, deferment of medical and dental students and their obligated service under Universal Military Training legislation, disposition of reserve officer interns after their internship, and the present status of residency training programs in the Armed Forces. (News Release, Armed Forces Medical Policy Council, 28 Dec. 1951)

2. E. G. McGavran, M.D., M.P.H., dean of the School of Public Health, University of North Carolina, has been appointed chairman of the Board of Editors of the new Public Health Reports, the first issue of which will appear in January 1952. It will be an expanded version of the weekly technical journal of the same name which has been published since 1878 by the Public Health Service. The new monthly Public Health Reports will incorporate two other technical publications of the Public Health Service, the Journal of Venereal Disease Information and the Communicable Disease Center Bulletin, and will also include the functions of the monthly Tuberculosis Control Issues of the old Public Health Reports. (News Release, FHA, PHS, 4 Jan. 1952)

3. For the year 1951 the total volume of cases of communicable diseases reported weekly by States to the Public Health Service increased over that reported in 1950. Most of this increase was due to a higher incidence of measles in 1951. Such diseases as diphtheria, smallpox and typhoid fever, for which there are preventive and control measures of established value, again showed moderate to substantial decreases in incidence. The increase in malaria in 1951 was due to infected military personnel who had returned from Korea. About one fourth of the more than 6,000 cases reported were classified as civilian, but most of them had been detached from military service or were treated by civilian physicians when on furlough. Intensive follow-up studies of reported cases in many States has indicated no evidence of an increase in indigenous malaria in the United States. (FSA, PHS, National Office of Vital Statistics, 4 Jan. 1952)

4. Brig. Gen. J. O. Gillespie (MC) USA, former Chief of Medicine at Letterman Army Hospital, San Francisco, California, has assumed his duties as Senior Army Staff Member assigned to the Armed Forces Medical Policy Council. In his new position, General Gillespie will be Chief of the Planning Coordination Division of the Armed Forces Medical Policy Council. He replaces Brig. Gen. Earle Standlee who is now Surgeon, Army Field Forces at Fort Monroe, Virginia. (News Release, Armed Forces Medical Policy Council, 8 Jan. 1952)



5. The swab test is superior to the fluorochromatic test for the purpose of determining the presence or absence of viable bacteria on washed dishes. The fluorochromatic test, though not satisfactory as a measure of bacterial cleanliness of eating utensils, is a useful method of indicating residual and/or redeposited food or other soil. (Preventive Med. Notes, Jan. 1952)

6. Hot or cold pack, to apply heat or cold to the human body, is made of a transparent, durable plastic and has 4 separated compartments, each filled permanently with a special chemical solution. To heat, the pack is placed in hot or boiling water. To chill, place in the refrigerator. (Science News Letter, 29 Dec. 1951)

7. A discussion of "Medical Responsibility for Juvenile Delinquency" appears in Postgraduate Medicine, December 1951, N. Blackman.

8. "Rehabilitation and the Practice of Medicine" is discussed in Archives of Physical Medicine, December 1951, by A. N. Koplin and S. Householder.

9. ACTH was administered to 3 patients with induced benign malaria; their responses were compared with those of 7 patients with malaria who did not receive ACTH. ACTH reduced slightly the amount of fever occurring during the paroxysms, but did not affect the periodicity or the height of the temperature responses. (New England J. Med., 27 Dec. 1951, E. H. Kass, Q. M. Geiman & M. Finland)

10. Groups A and C streptococcal strains have been shown to give rise to hyaluronidase-producing mutants. Such mutants may have differing capacities for hyaluronidase production. Hyaluronidase was not found intracellularly. Its production was associated with the active metabolism of the streptococci. Anaerobic metabolic conditions were found to be highly favorable for hyaluronidase formation by the streptococci studied. (J. Bact., Dec. 1951, B. Sallman)

11. Plastic eyeglass frames will burn when exposed to an open flame, and could prove to be a source of danger in lighting a cigarette, pipe or cigar. Thirty samples were burned under standard conditions and the rate of ignition and burning characteristics tabulated. Twenty-six of the samples were found to burn violently enough to be a source of danger. (Am. J. Opth., Dec. 1951, P. V. Portfliet & F. B. Fralick)

12. Separation of 36,800 Naval Reservists was effected by the end of 1951 under the release programs which began last July. (All Hands, Jan. 1952)

13. The U. S. Patent Office issued 44,356 patents in 1951; 1,284 more than in 1950. The weekly average was 853. (Science News Letter, 5 Jan. 1952)



BUMED CIRCULAR LETTER 51-163

December 1951

From: Chief, Bureau of Medicine and Surgery

To: All Ships and Stations

Subj: Roentgenographic examination of the chest; serology test for syphilis; dental examination; and PULHES classification; on enlistment, re-enlistment or induction; reporting, and forwarding reports of

Ref: (a) Art. 16-32(42), Man Med Dept  
(b) Art. 16-32(41), Man Med Dept  
(c) Art. 16-45(3), Man Med Dept  
(d) Art. 16-58(9), Man Med Dept  
(e) Art. 16-58(4), Man Med Dept  
(f) Art. 15-90(6), (c), (1) and (2), Man Med Dept  
(g) Art. 16-52(1), Man Med Dept  
(h) Art. 16-46, Man Med Dept  
(i) BUPERS Cir Ltr No. 65-51, NDB 30 Apr 1951, 51-297  
(j) 232.2 Par 6 (BUPERS) Recruiting Service Manual  
(k) CMC ltr AP-1023-hlf of 24 Apr 1951  
(l) 328.5 (BUPERS) Recruiting Service Manual (modified, Recruiting Service Note 92-51 of 19 Sep 1951)  
(m) Art. 16-7(1), Man Med Dept (A.C.1-3)  
(n) BUPERS Recruiting Service Instructions, 211.1 Par 10.0  
(o) CMC ltr MC-1051367 of 18 Oct 1948  
(p) Art. 23-133, Med-058, Man Med Dept  
(q) Art. 15-90(6)(a) and (b), Man Med Dept

1. General.--Reference (a) requires the recording of the date and interpretation of roentgenographic examinations of the chest, upon original entry into the service, on the NAVMED-H-2. Reference (b) requires the recording of the date and interpretation of the serology test for syphilis, upon original entry into the service, on the NAVMED-H-2. Reference (c) requires the recording of the date and interpretation of roentgenographic examinations of the chest, other than those for original entry into the service, on NAVMED-H-3a and also on NAVMED-H-8. Reference (c) also requires the recording of serology tests, other than those upon original entry into the service, on NAVMED-H-3a and also on NAVMED-H-8. Reference (d) requires the recording of the date and interpretation of roentgenographic examinations on NAVMED-H-8, and also on NAVMED-H-3a or NAVMED-H-2, as appropriate. Reference (e) requires the recording of the date and interpretation of all serology tests on NAVMED-H-8. Reference (f) prescribes the procedure for compliance with references (a) and (d), and the portion of reference (c) applicable to recording of X-ray examinations. Reference (g) requires that each entry on NAVMED-H-8 be signed by the medical officer or Medical Department representative who is cognizant. Reference (h) requires

that a Dental Record (NAVMED-H-4) be prepared for each person who enters the Navy or Marine Corps. Reference (i) suspends physical and dental standards set forth in the Manual of the Medical Department for enlistment of males in the U. S. Navy and U. S. Naval Reserve, and establishes instead for that purpose the physical and dental standards specified in Army Regulation 40-115. Reference (j) requires male applicants for enlistment be classified, for record purposes, by the PULHES method prescribed in Army Regulation 40-115. Reference (k) suspends the physical and dental standards set forth in the Manual of the Medical Department for enlistment of males in the U. S. Marine Corps and establishes instead for that purpose the physical and dental standards specified in Army Regulation 40-115. It also requires physical classification of male applicants by the PULHES method. Reference (l) establishes procedure for submission of Standard Form 88's and Standard Form 89, as applied to enlistment in the Officer Candidate Program only. Reference (m) requires the submission of NAVMED-H-2 and NAVMED-H-4 to the Bureau, and provides for making those forms current upon call of a Reserve member to active service. Reference (n), (o) and (p) require reporting to public health departments by station of entry or first duty station those individuals who present signs or symptoms of venereal disease, or present a history of treated syphilis, and provide serologic and diagnostic services in individuals referred to health departments. Reference (q) regulates the identification and forwarding of X-ray films from Navy medical activities.

2. As used herein, the term "station of entry" signifies recruiting stations, induction stations, and Armed Forces Examining Stations. Offices of naval officer procurement are also included, but only insofar as processing of applicants for enlistment in the Officer Candidate Program, reference (1), is concerned. References (g) and (h) do not apply to enlistment under provisions of reference (1).

3. Stations of entry equipped for roentgenographic examinations shall report the date and interpretation of the chest roentgenogram in accordance with references (a) and (d), in the manner prescribed by reference (f). Stations of entry not so equipped shall enter on the last line of NAVMED-H-2 and on NAVMED-H-8 the words:

"X-RAY: DO at first equipped duty station."

4. Stations of entry equipped for blood serology tests for syphilis, or who use a local public health serology examination facility, shall report the name, date, and interpretation of the test in accordance with references (b), (c), and (e). Stations of entry not so equipped shall enter on the next to last line of NAVMED-H-2 and on NAVMED-H-8 the words:

"S.T.S: DO at first equipped duty station."



5. Stations of entry without the services of a dental officer shall report examination of teeth, gums, oral cavity and oropharynx on the dental portion of Standard Form 88 only. In the box (26. DENTAL), under REMARKS AND DISQUALIFYING DENTAL DEFECTS, type the words:

"Dental examination not made by a dental officer."

NAVMED-H-4 shall not be completed at stations of entry without the services of a dental officer.

6. The station of entry shall comply with reference (j), or reference (k), as appropriate. The resultant PULHES classification shall be reported on NAVMED-H-8.

7. The station of entry shall forward all medical and dental forms to the first duty station, or in accordance with reference (m), if appropriate, except Standard Forms 88 and 89 in the case of Officer Candidate Program candidates processed under reference (1). Armed Forces Examining Stations shall enclose the photofluorographic X-ray film with the medical forms; naval activities shall comply with reference (q). Except as directed in references (q) and (1), no medical forms, or information copies thereof, shall be forwarded directly to the Bureau by the station of entry. The station of entry shall preserve information copies of medical forms for one year against the possibility of loss of the originals, after which such copies shall be destroyed.

8. In instances where roentgenographic chest examination and/or blood serology test for syphilis are not available on entry, the first duty station equipped for those examinations shall accomplish them. The date and interpretation of the examinations shall be reported upon the NAVMED-H-3a and H-8 in accordance with references (c), (d) and (f), and/or (c) and (e), as appropriate, and shall be authenticated by appropriate signature in accordance with reference (g). Under no circumstances shall roentgenographic or serologic examinations performed at a station other than a station of entry be recorded upon NAVMED-H-2. The NAVMED-H-4 shall be accomplished in duplicate at the first duty station where a dental officer may be available for doing so, if it had not been accomplished previously in accordance with Articles 6-58, 6-59, 6-60 and Section IX, Chapter 6, of the Manual of the Medical Department.

9. Excepting recruit training centers in the case of recruits, the first duty station equipped for completing postponed chest X-ray examinations, blood serology tests for syphilis, and dental examinations shall submit the carbon copies of NAVMED-H-2, NAVMED-H-4, and NAVMED-H-8 and the original of the Standard Form 88 with Standard Form 89 to the Bureau when completed. Recruit training centers shall submit these forms for recruits after they have completed recruit training. If an X-ray film of the chest is made at an Armed Forces

Examining Station, the film, with its jacket properly identified with the individual's Navy or Marine Corps service number, shall be shipped to Navy Records Management Center, Garden City, Long Island. X-ray film of Navy origin shall be disposed of in accordance with reference (q). The Naval School, Officer Candidate, shall submit NAVMED-H-2, NAVMED-H-4 and NAVMED-H-8 only, the Standard Form 88 and Standard Form 89 having previously been forwarded in this instance. The required medical forms shall be accumulated and stapled together for each individual prior to forwarding to the Bureau. Separate submission of forms multiplies review and filing operations in the Bureau, and it is therefore directed that separate submissions not be made. Compliance by the appropriate activities with the provisions of paragraph 7, and of this paragraph, constitutes proper compliance with reference (m) except as prescribed therein in regard to enlistment in the Naval Reserve for inactive service.

10. (a) Medical officers and dental officers of stations which are the first duty station of recruits and/or inductees shall provide for continuous inspection of medical and dental forms received from stations of entry. Whenever persistent or flagrant errors in submission of medical or dental forms are noted, the medical officer or the dental officer of the first duty station, depending on whether a medical or dental form is involved, shall advise the errant station of entry of the circumstances, citing specific individual cases by name, and request the station of entry to comply with pertinent provisions of this directive.

(b) Medical officers and dental officers of stations which are the first duty station of recruits and inductees shall insure continuous compliance with the provisions of paragraphs 8 and 9 of this directive.

H. L. Pugh

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BUMED CIRCULAR LETTER 52-1

7 January 1952

From: Chief, Bureau of Medicine and Surgery

To: All Naval Hospitals

Subj: Collection for meals sold from hospital mess

Ref: (a) ALNAV 51-51

(b) ALNAV 118-51

(c) BUMED Cir Ltr No. 50-67 ✓

(d) BUMED Cir Ltr No. 51-39 ✓

(e) BUMED Cir Ltr No. 51-116

1. Paragraphs 12 and 13 of reference (c) and paragraph 13 of reference (d) are hereby cancelled. Reference (e) is modified by the deletion of the last sentence,



paragraph 4, Section F, Line 108.

2. As soon as practicable after receipt of this letter, cash collection at the time of serving will be made for all meals sold from hospital messes except those sold to food handlers.
3. Commanding officers will establish and implement the necessary procedures to effect cash collections so as to provide for adequate control of monies and permit an effectual audit. If in the opinion of the command, the number of meals sold to authorized personnel is sufficient to warrant use of a cash register in connection with collection and recording of such sales, a requisition for procurement of the necessary registers should be submitted to the bureau for approval. Past experience in the use of cash registers has shown that the type of machine equipped with four denoting keys with separate totals to facilitate recording of the classification of personnel authorized to purchase meals and equipped to provide an individual receipt for each sale, is desirable.
4. Cash collected from the sale of meals shall be deposited with the disbursing officer to be credited to the proper appropriation and expenditure account and otherwise handled in accordance with the provisions of reference (c).
5. This letter in no way modifies or changes the procedure in effect regarding meals furnished food handlers who will continue to be subject to payroll checkage.

H. L. Pugh

The above letter will not be published in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 52-2

8 January 1952

From: Chief, Bureau of Medicine and Surgery

To: All Shore Stations

Subj: Dental outfitting material; requisitioning procedure

Ref: (a) BuMed Circular Letter No. 41-31 ✓

(b) MMD Art. 24-25 (2) ✓

1. Reference (a) is canceled and superseded by this letter.
2. Dental equipment and supplies to initially outfit the dental department of a shore activity of the Navy or Marine Corps may be requested by letter or dispatch in lieu of itemized requisitions, provided not more than three (3) dental operating rooms are to be equipped.

3. The letter or dispatch shall be sent to the Bureau of Medicine and Surgery. It shall denote:

- a. Material needed in terms of numbers of dental operating rooms.
  - b. Electric power supply.
  - c. Date delivery is desired.
  - d. Shipping and marking instructions (if indicated).
  - e. Number of buildings in which equipment will be installed (if more than one operating room is ordered).
4. Prosthetic laboratory equipment and other initial outfitting material will be requisitioned in accordance with reference (b).
5. Upon approval of the request by the Bureau of Medicine and Surgery, an appropriate medical supply depot will furnish the material.

H. L. Pugh

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NAVY DEPARTMENT  
BUREAU OF MEDICINE AND SURGERY  
WASHINGTON 25, D. C.  
OFFICIAL BUSINESS  
Permit No. 1048  
NavMed-369 1/52

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